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Memo

To: **Philip Allen - EPA**

From: **Bob Piniewski – Project Coordinator**

Date: **February 16, 2009**

Re: **Technical Work Group Meeting Minutes and Agreements February 12, 2009**

Attached please find a memorandum prepared by the Patrick Bayou Joint Defense Group RI/FS contractor, Anchor QEA summarizing the recent Technical Work Group meeting of February 12, 2009.

We will compile all Agreements resulting from the meetings of the Technical Work Group and submit within two weeks for your approval.

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MEMORANDUM

To:	Bob Piniewski, PNL	**Date:**	February 13, 2009
From:	Jason Kase, David Keith, and David Haury; Anchor QEA, LLC	**Project:**	Patrick Bayou Superfund Site
Re:	Patrick Bayou Technical Workgroup February 12th, 2009 Meeting Minutes		

The purpose of this memo is to summarize the discussion and decisions made during the conference call of the Patrick Bayou Superfund Site Technical Workgroup on February 12th, 2009.

INTRODUCTION:

[Bob Piniewski]

Provided a summary of the objectives of this call:

- Review the memorandum describing the proposed representative receptor for the carnivorous bird feeding guild
- Get feedback from the Technical Workgroup on the proposed receptor
- Make a decision on the receptor to be used in the BERA

MEMORANDUM SUMMARY

[Jason Kase]

Provided a summary of the contents of the memo (attached). Salient points:

- The Great Blue Heron was originally proposed as the representative receptor to the Technical Workgroup
- The Green Heron was proposed as an alternative receptor for this guild
- Similarities between species:
    - Year-round residents of southeast Texas
    - Both species would likely forage to some degree at the Site
    - Nesting by either species at or adjacent to Site is unlikely

  - Foraging range area relative to Site size is expected to be similar
  - Diet (primarily fish with opportunistic feeding on aquatic and terrestrial invertebrates, amphibians, small mammals)
  - Ecological relevance, sensitivity to COPC, and social or economic importance are same
- Differences between species:
  - Great Blue Heron body weight is higher, metabolic rate is lower, and estimated ingestion rate per unit body mass is lower relative to Green Heron
  - Great Blue Heron may prefer Site habitat relative to Green Heron due to lack of preferred canopy cover and perching structure for Green Heron and more of the Site is likely available for foraging due to Great Blue Heron's longer legs (increased depth of wading possible)
  - Great Blue Heron is one of the largest members of this guild; Green Heron is one of the smallest
  - Body weight would favor higher relative exposure of Green Heron; Site habitat would favor potentially higher exposure to Great Blue Heron
- Recommendations:

  Use a composite receptor. Composite receptor would represent the average body weight, composite diet, and habitat utilization of species represented by the assessment endpoint; survival, growth, and reproduction of populations of carnivorous wading birds.
  - Supporting arguments:
    - Selection of representative receptor is not intended to explicitly protect specific species within the guild; rather to protect the guild.
    - Exposure of a composite receptor will be a conservative but representative choice for this guild
    - This approach has been implemented at other Region 6 BERA (Calcasieu Estuary RI/FS)
    - Both deterministic and probabilistic uncertainty analysis will provide opportunities to quantitatively assess the protectiveness of the representative receptor for potentially sensitive members of the guild (e.g. lower body weight species)

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DISCUSSION AND Q&A:

[All]

Much of the discussion centered on the conservatism and protectiveness of the composite receptor for small body weight members of the guild (e.g. Green Heron)

Question: *Why would we not choose the Green Heron to ensure that the guild is protected if it is the most conservative choice in terms of potential exposure?*

Response[1]: In the BERA, representative receptors are chosen to evaluate the assessment endpoint using available measurement endpoints. For wildlife, this is typically done by estimating ingestion of contaminants through the diet (including incidental ingestion and feeding). Assessment endpoints are chosen to encompass a group of species with some common characteristic, such as route of exposure (e.g. diet, foraging area). Key exposure factors for this guild (and all wildlife guilds) include ingestion rate, diet composition, and access to the Site. In terms of ingestion rate, the Green Heron is expected to be a conservative choice due to its relatively low body weight for this guild. However, it is not necessarily the most conservative choice in terms of Site access and diet composition. Other species may have relatively higher exposure due to their increased ability to forage at the Site, greater preference for Site habitat, and diet composition (e.g. higher proportion of aquatic invertebrates). Thus, the Green Heron cannot be assumed to be the most conservative choice for this guild. Regardless of the chosen receptor, any extrapolation to other species have some uncertainty. A qualitative and quantitative assessment of this uncertainty will be an important component of the BERA; use of probabilistic methods will allow a more robust assessment of this uncertainty. Finally, USEPA felt that a composite receptor was a reasonably protective choice for this guild.

[1] One important response to this question was not discussed during the call but is an important consideration. The spotted sandpiper is a representative receptor of the sediment-probing bird guild and will be assessed as part of the BERA. This receptor, while not explicitly representing carnivorous wading birds, will be protective of smaller herons such as the Green Heron. It has a much lower body weight (~50 grams), has a similar diet and foraging characteristics, and is likely to have a great likelihood of exposure to the site due to habitat preferences and a relatively high incidental ingestion sediment rate as compared to small herons. Thus, it can be expected that this receptor, in combination with the carnivorous guild receptor, would, with a high degree of probability, be protective of Green Heron and other small herons that may occur at the Site.

Question: *Do we know what relative proportion of birds in this guild that would occur at the Site are lower body weight receptors?*

Response: Not without uncertainty. Site-specific data regarding the avian community are lacking. Collection of data to assess this question could be performed, but the scope and timeline to quantitatively assess the long-term utilization of the Site by avian species would significantly impact the project schedule (multi-season and –year studies would likely be required). However, anecdotal observations of several species of carnivorous wading birds representing a range of sizes and life history characteristics (e.g. great blue herons to green herons) have been recorded (J. Kase) and local and regional studies have identified a wide range of species in this guild occurring near the Site.

DECISIONS

It was agreed that a composite receptor would be used to represent the carnivorous wading bird guild. An average body weight for members of this guild, including the Green Heron would be used. No final decision on the diet composition or site utilization (e.g. AUF or EMF) by this composite receptor was made.

It is acknowledged that there is some level of concern among members of the Technical Workgroup that this composite receptor may not be adequately protective (or, alternatively, it is uncertain whether it is adequately protective given the available information) of Green Heron or other small body weight carnivorous wading birds. It is expected that this concern will be addressed throughout the risk assessment process through the uncertainty analysis and the probabilistic risk assessment, as appropriate.

ADDENDUM TO DISCUSSION

Most of this discussion was limited to the choice of a conservative, representative receptor for the carnivorous wading bird guild. In a larger sense, it is important to consider the overall goals and methods of the BERA. Within the avian wildlife receptors, 3 feeding guilds, 4 assessment endpoints, and 5 species will be evaluated in the BERA. The distinction among guilds and members of guilds is somewhat subjective, there is much overlap in the life history, behavioral, and physiological characteristics of species being represented. The overall intent is to select guilds, endpoints, and species that will be representative and

protective of this class of receptors (birds), including the more sensitive members. Referring specifically to the protection of smaller herons, the choice of the carnivorous wading bird receptor, in addition to the sediment-probing bird (spotted sandpiper; see footnote 1) and, to some degree, the brown pelican and piscivorous bird receptors (belted kingfisher and osprey) should be considered reasonably and conservatively protective of the potential exposure of this subpopulation of receptors.